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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,972	03/09/2005	Koichi Nakahara	KPO-SUN-P1/SN-71/US	6169
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OSTRAGER CHONG FLAHERTY & BROITMAN PC 250 PARK AVENUE, SUITE 825 NEW YORK, NY 10177				
			EXAMINER WITHERSPOON, SIKARL A	
			ART UNIT	PAPER NUMBER
			1621	

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/510,972	<b>Applicant(s)</b> NAKAHARA ET AL.	
	<b>Examiner</b> Sikarl A. Witherspoon	<b>Art Unit</b> 1621	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 April 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 is/are allowed.
- 6) ☒ Claim(s) 8-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/17/06</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The examiner has considered applicants' response filed April 17, 2006 and the arguments therein. Applicants' arguments were persuasive with regard to the rejection of claim 1 under 35 U.S.C. 102(b), and claims 2-7 under 35 U.S.C. 103(a), and as such, the rejections of said claims have been withdrawn. Claims 8-13 are still rejected under the same grounds raised in the previous Office Action and the rejection has been rewritten below.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikushima et al (US 6,300,523) and further in view of Catallo et al (US 6,180,845).

The instant claims are drawn to the production of a carbonyl compound by reacting a primary or secondary alcohol with subcritical or supercritical water to convert the alcohol into a carbonyl compound.

Ikushima et al teach a process wherein water is supplied to a reactor and brought to supercritical state and then reacted with pinacol to form pinacoline (abstract and col. 5, lines 1-48).

The differences between Ikushima et al and the present claims are that Ikushima et al teach a reactant that is a tertiary alcohol, i.e., pinacol, and does not teach a deoxygenated atmosphere.

First, the examiner contends that it would have been obvious to a person of ordinary skill that if one of the R-groups in the formula for pinacol disclosed at column 5, lines 40-45 of Ikushima et al were hydrogen, that is, if the compound was a secondary alcohol, the reaction with supercritical water would still proceed, thereby producing the corresponding carbonyl compound, since one of ordinary skill would reasonably expect a methyl-substituted starting compound according to Ikushima et al to reactant in a similar manner as a hydrogen-substituted starting compound.

Ikushima et al do not mention a deoxygenated atmosphere; however, Catallo et al teach a process for the transformation of hydrocarbon mixtures in supercritical water preferably under anoxic or as close to anoxic conditions as possible. It therefore would have been obvious to a person of ordinary skill in the art, in light of the combined reference teachings to modify the reaction conditions taught by Ikushima et al and adopt a deoxygenated reaction atmosphere as per Catallo et al, one of ordinary skill being motivated to make such a modification of reaction conditions by the desire to avoid the production of carbon oxides, as suggested by Catallo et al (col. 4, lines 19-22).

### ***Response to Arguments***

Applicant's arguments filed April 17, 2006 have been fully considered but they are not persuasive with regard to claims 8-13 as rejected above. The thrust of

applicants' argument is that Ikushima et al conduct a process in which hydrogen is never produced by the reaction. The examiner concedes that applicants are correct in that regard; however, independent claim 8 does not require or recite that water-derived hydrogen is formed by the process. Therefore, the examiner deems the rejection of claims 8-13 proper.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikarl A. Witherspoon whose telephone number is 571-272-0649. The examiner can normally be reached on M-F 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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*Si Karl A. Witherspoon*  
**SIKARL A. WITHERSPOON**  
**PATENT EXAMINER**